

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



Office of Pesticide Programs

**MEMORANDUM**

4/2/2020

**SUBJECT:** Product Chemistry Review for *Sis 200D RTU*, EPA Reg. No.: **75174-RN**

**FROM:** Narayanan Parthasarathy  
Chemistry and Toxicology Team  
Product Science Branch  
Antimicrobials Division (7510P)

**THRU:** Karen P. Hicks, Team Leader 04/02/2020  
Chemistry and Toxicology Team  
Product Science Branch  
Antimicrobials Division (7510P)

**TO:** Kathryn Montague, PM Team 31 / Karen Leavy  
Regulatory Management Branch I  
Antimicrobials Division (7510P)

Registrant: **SiShield Technologies Inc.**

Action code: A540

Agency Due Date: 5/11/2020

DP No.: 455400

Submission No.: 1043182

E-Sub No.:

Classification: EP

Process: Nonintegrated system

Pesticide type: Disinfectant

MRID(s):51009501-51009504 & 50285404

Formulation from label			
PC code(s)	CAS No.	Active Ingredient(s)	% weight
069105	68424-85-1	Alkyl dimethyl benzyl ammonium chloride (50%C <sub>14</sub> , 40%C <sub>12</sub> , 10% C <sub>16</sub> )	0.0500%
069166	5538-94-3	Diocetyl dimethyl ammonium chloride	0.0150%
069165	32426-11-2	Octyl Decyl dimethyl ammonium chloride	0.0375%
069149	7173-51-5	Didecyl dimethyl ammonium chloride	0.0225%
107401	27668-52-6	3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride**	0.3280%
		Other Ingredients	99.5470%
		Total	100.0000%
<b>107403</b>	<b>19911-50-7</b>	<b>3-(trihydroxysilyl) propyldimethyloctadecyl ammonium chloride**</b> <b>** (Produced by hydrolysis)</b>	<b>0.2990%</b>

Comments/Molecular Structure

3-(trimethoxysilyl) propyldimethyloctadecyl ammonium chloride\*\*

↓ Hydrolysis

**3-(trihydroxysilyl) propyldimethyloctadecyl ammonium chloride + Methanol**

## I. BACKGROUND

On behalf of the Registrant, SiShield Technologies Inc., KRK CONSULTIG LLC has submitted an application for pesticide registration for their product: SiS 200D RTU, EPA Reg. No. 75174-RN.

## II. RELEVANT DOCUMENTS

	RECEIVED	N/A
EPA FORM 8570-27 – Formulator’s Exemption Statement	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EPA FORM 8570-35 – Data Matrix (12/26/2019)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cover letter (11/15/2019)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Transmittal document	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Proposed CSF BASIC, (1/3/2020)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Proposed label, (1/3/2020)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Certification for Pilot Fragrance Notification Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
REFERENCED: CSF	--	
Comments:		

## III. FINDINGS

### a. Product Formulation:

	TGAI	MUP	EUP	Food use	Non-food use
Non-integrated	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Integrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Active Ingredients(s)			Nominal	Upper limit	Lower limit
Alkyl dimethyl benzyl ammonium chloride (50%C <sub>14</sub> , 40%C <sub>12</sub> , 10% C <sub>16</sub> )			0.0500%	0.0550%	0.04500%
Diocetyl dimethyl ammonium chloride			0.0150%	0.01650%	0.01350%
Octyl Decyl dimethyl ammonium chloride			0.0375%	0.04125%	0.03375%
Didecyl dimethyl ammonium chloride			0.0225%	0.02475%	0.02025%
3-(trimethoxysilyl) propyldimethyloctadecyl ammonium chloride ↓Hydrolysis 3-(trihydroxysilyl) propyldimethyloctadecyl ammonium chloride			0.328%  0.2990%	0.359%  0.3260%	0.291%  0.2680%

	YES	NO	N/A
1. The certified limits of all ingredients are within 40 CFR standard certified limits.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Wider certified limits were requested, and rationale was accepted.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. The nominal concentration(s) of the active ingredient is in agreement with the label.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. The chemical IDs and analytical information for density, pH, and flammability are consistent with Series 830 Group B data.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. All inert ingredients are approved for non-food use pesticide formulations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The impurities present >0.1% are identified.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Impurities of toxicological significance have an upper certified limit.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b. Product Label:

	Yes	NO	N/A
<i>The formula contains one of the following:</i>			
1. 10% or more of petroleum distillate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. 1.0% or more of methyl alcohol	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sodium nitrite at any level	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. A toxic list 1 inert at any level	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Arsenic in any form	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. If yes to 1-5, then the inert ingredient list contains a relevant footnote	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Appropriate warning statements regarding flammability or explosive characteristics of the product are included on the label	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. The storage and disposal instructions for the pesticide container are in compliance with PR Notice 84-1 for household use products or PR Notice 83-3 for all other uses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The product requires an expiration date at which time the nominal concentration falls below the lower certified limit.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IV. Additional Findings

1. Basic CSF (1/3/2020) is acceptable. The registrant had provided data to support Product Chemistry data requirements, Group A & B 830 guidelines for end-use, non-integrated, non-food use disinfectant, Sis 200D RTU, EPARN 75174-RN.
2. Storage Stability (830.6317 guideline) and Corrosion Characteristics (830.6320 guideline): Test substance was stored in a glass container at  $54 \pm 2^{\circ}\text{C}$  for a total of 14 days (Please refer to MRID 51009504, dated May 10, 2019). Total Quaternary Ammonia (%) was determined in duplicates at Day 0 and Day 14. However, EPA Application from 8570-1 dated 11/15/2019 indicates that type of container (package) is plastic which is same in the proposed label. Therefore, Storage Stability and Corrosion Characteristics studies conducted using glass container is not compatible with plastic container. Therefore, the registrant had not met with data requirements for Storage Stability and Corrosion Characteristics.

## **V. Conclusion**

Basic CSF (1/3/2020) is acceptable. The registrant had provided data to support Product Chemistry data requirements, Group A & B 830 guidelines for end-use, non-integrated, non-food use disinfectant , Sis 200D RTU, EPARN 75174-RN, except for Storage Stability (830.6317 guideline) and Corrosion Characteristics (830.6320 guideline) which must be submitted upon completion.

**VI. Table A:**  
**Series 830 guidelines – Group A**

OPPTS#	Name	Status	MRID
830.1550	Product Identity & Composition	Acceptable	51063901
830.1600	Description of materials	Acceptable	51063901 & CSF
830.1620	Description of production process	Not applicable, non-integrated	N/A
830.1650	Description of formulation process	Acceptable	51063901
830.1670	Discussion of formation of impurities	Acceptable	51063901
830.1700	Preliminary analysis	Not applicable, non-integrated	N/A
830.1750	Certified limits	Acceptable	51063901 & CSF
830.1800	Enforcement analytical method	Acceptable	51063901
830.1900	Submittal of samples	Available upon request	51063901

**VII. Table B: Series 830 guidelines – Group B**

OPPTS#	Name	Study Findings/Comment	Status	MRID
830.6302	Color	Not required for end use product	Not applicable	N/A
830.6303	Physical state	liquid	Acceptable	51063902 & Self certification EPA form 8570-36
830.6304	Odor	Not required for end use product	Not applicable	N/A
830.6313	Stability to normal & elevated temperatures, metals & metal ions	The product is not TGA1	Not applicable	N/A
830.6314	Oxidation/Reduction	Mild reaction with reducing agent	Acceptable	51063902 & Self certification EPA form 8570-36
830.6315	Flammability	The product is 99.9625% water	Not applicable	51063902 & Self certification EPA form 8570-36
830.6316	Explosibility	The product is 99.9625% water	Not applicable	51063902 & Self certification EPA form 8570-36
830.6317	Storage stability	Accelerated Storage Stability at 54 ± 2°C for 14 days was conducted.	Not acceptable	<b>51009504</b>
830.6319	Miscibility	Product will be diluted with water only	Not applicable	51009502 & Self certification EPA form 8570-36
830.6320	Corrosion characteristics	Corrosion Characteristics were examined after storage at 54 ± 20C for 14 days	Not acceptable	<b>51009504</b>
830.6321	Dielectric breakdown voltage	Product not used near electrical equipment	Not applicable	51063902 & Self certification EPA form 8570-36
830.7000	pH	5.0 – 6.0	Acceptable	51063902 & Self certification EPA form 8570-36
830.7050	UV/Visible absorption	Not required for MUP or EP	Not applicable	N/A
830.7100	Viscosity	0.89 cps spindle #1@ 25°C	Acceptable	51063902 & Self certification EPA form 8570-36
830.7200	Melting point	Not required for MUP or EP	Not applicable	N/A
830.7220	Boiling point	Not required for MUP or EP	Not applicable	N/A
830.7300	Density/relative	0.993g/ml	Acceptable	51063902 & Self certification EPA form 8570-36
830.7370	Dissociation constants in water	Not required for MUP or EP	Not applicable	N/A
830.7520	Particle size	Not required for MUP or EP	Not applicable	N/A
830.7550/ 7560/ 7570	Partition coefficient	Not required for MUP or EP	Not applicable	N/A

830.7840/ 7860	Water solubility	Not required for MUP or EP	Not applicable	N/A
830.7950	Vapor pressure	Not required for MUP or EP	Not applicable	N/A

## **CONFIDENTIAL APPENDIX**

**75174-RN**

**DP# 455400**

**SiShield Technologies Inc**

**Sis 200D RTU**



## NOTE TO PM

MRIDs 510639021 & 51063902 are paper submissions and will be loaded into DOCUMENTUM

